# *Chapter 2: The Vermont Interactive Map Viewer*

## In this Exercise:

- An Online GIS Application Example
- The Interface
- Mapping Exercise: Locate VCGI Using the Basemap and Exploring Functionality
- Additional Online Mapping Applications
- Online Resources

**This exercise requires an active Internet connection.**

## An Online GIS Application Example

**The Vermont Interactive Map Viewer** is an online GIS mapping application that allows users to view Vermont's geographic information interactively with functionality typical of most GIS software. Functions include, but are not limited to, the ability to zoom, pan, search for features / addresses, and print a map allowing the user to have control over the area displayed and to decide which data layers are visible on the map.

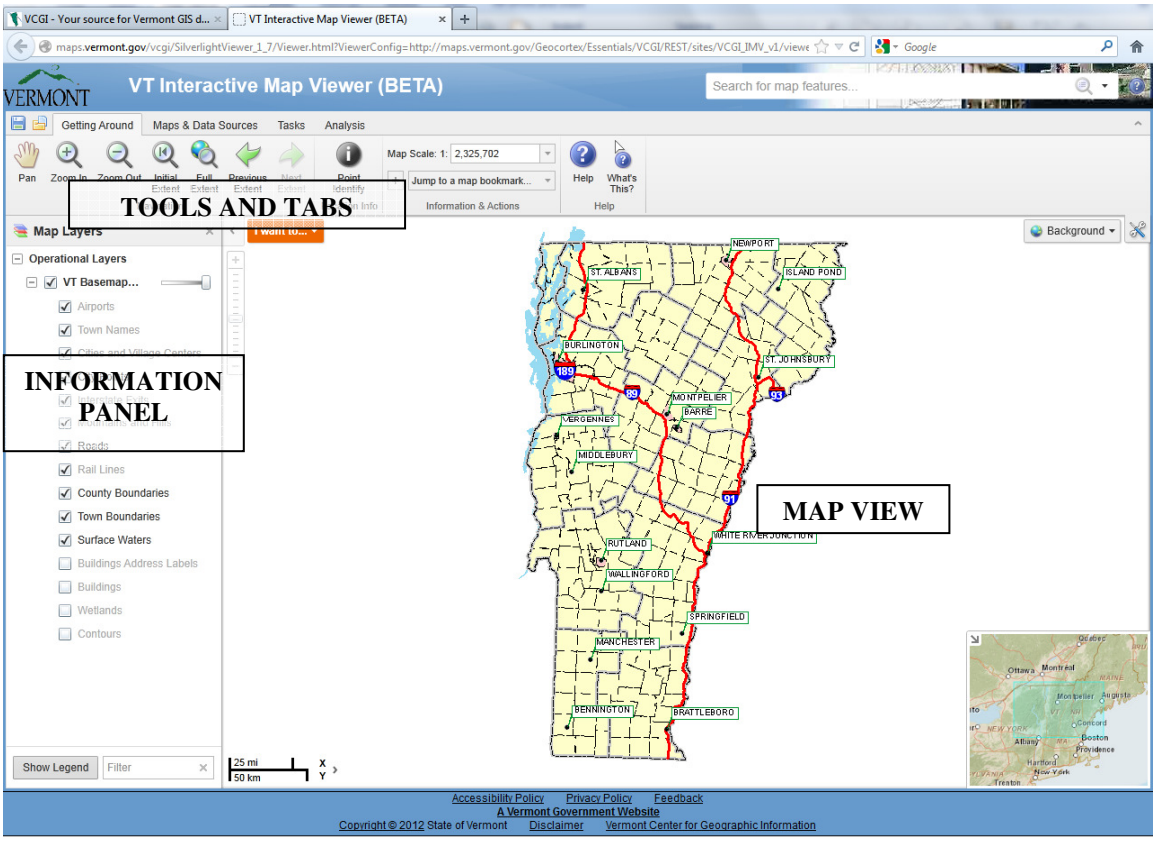
To access **The Vermont Interactive Map Viewer** visit the VCGI website (www.vcgi.org) and select the following:

**Map Center**
↳ **Interactive Maps**
↳ **VT-Vermont Interactive Map Viewer**

In this example, GIS software is running remotely (at VCGI) but is available through the web with tools and options that, when selected, initiate the creation of maps that appear as a series of images (usually in JPEG format).

## The Vermont Interactive Map Viewer Interface

The interface for **The Vermont Interactive Map Viewer (IMV)** is typical of that found with most GIS software packages. Elements of the interface include:



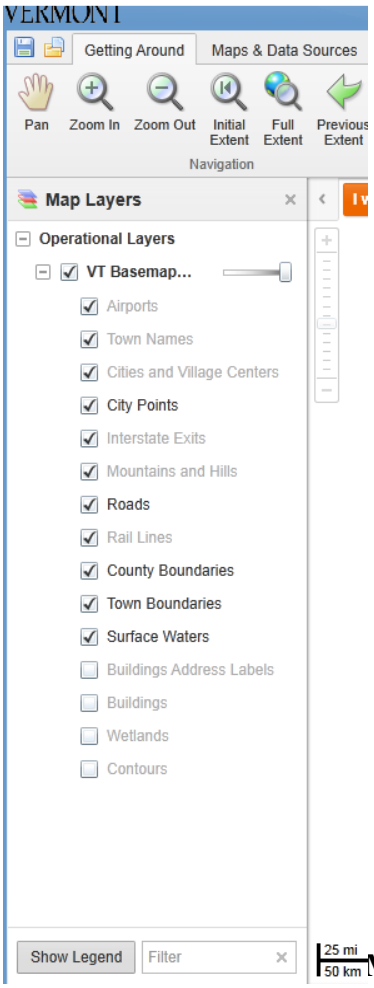

The **MAP VIEW** is the window where the map is displayed. The map image will change (redraw) depending on options that are selected when using **TOOLS** and **TABS**. You can click on the arrows that appear around the edge of the map area to "**pan**", or move, the window slightly in each direction. For example, clicking on the arrow on the right edge of the map will cause the map to pan towards the east.

The **INFORMATION PANEL** displays either the list of map layers or the legend associated with the ma. You can click on the  Show Legend button at the bottom of the information panel to toggle between either the names of layers and their symbology or just the names with check boxes that allow you to control the visibility of layers on the map ("Show Layers").

To change the visibility of layers, simply click to add a √ to the box next to the layer.

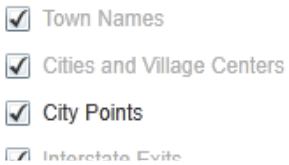
The map will automatically redraw.

After clicking the check box, allow the map image to refresh before checking a second layer.




**Move the slider Move the slider bar down to see more layers or to read the "Notes"**

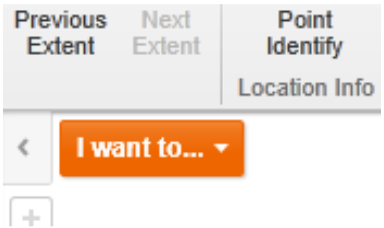
Note: When zooming in and out certain layers will be enabled or disabled based on their set scale range. Right click on the layer name to see visible scale range or to zoom to visible scale range. The names of disabled layers appears grey rather than black



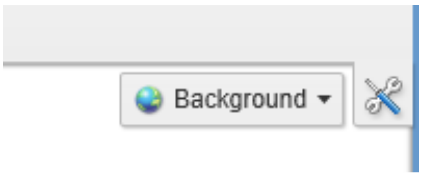
The **TABS AND TOOLS** in the upper left of the interface enable the user to do many things. Notice that there are 4 different **TABS** (Getting Around, Maps and Data Sources, Tasks, and Analysis) with a variety of tools available within each tab. If you hold your cursor over each tool a brief explanation of that tool will appear We will explore these tabs and tools in the next section.

In addition to the tabs and tools, there are several buttons and drop-down menus with which to interact.

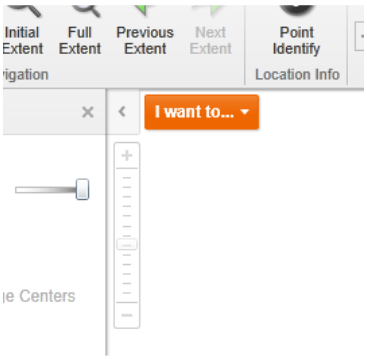
The **orange "I Want To..." drop down menu** should appear in the upper left area of the map image. Click on it to see what your options are. This menu serves as a quick link to popular functionality (i.e. all of this functionality is found in various other tools and buttons).



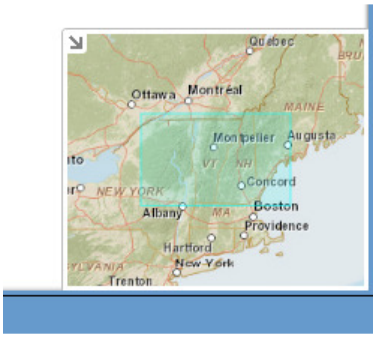

The **"Background" drop down menu** is found in the upper right area of the map image. When you click on it, you will see a list of basemap choices that can appear behind the map layers listed in the information panel. Choose a different background by clicking on it. Keep in mind that the level of detail will change quite a bit as you zoom in.



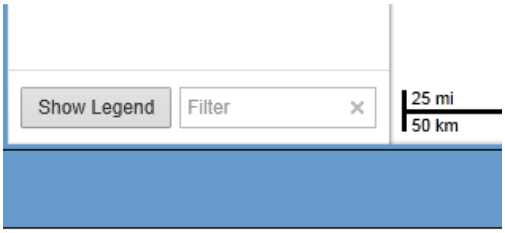

The **Zoom slider bar** appears just below the "I Want To..." menu and allows you to quickly zoom in or out (while staying centered on the same spot) by either sliding the marker or clicking on the + (zoom in) or - (zoom out).



Notice that you can collapse or expand **the locator map** found in the bottom right corner of the map image by clicking on the small arrow in the corner of that map.



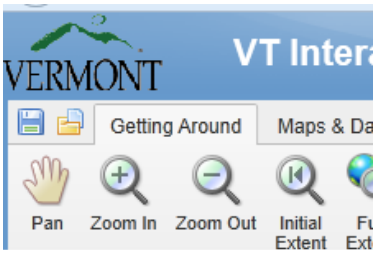

If you are wondering what a symbol on the map is, you can click on the "Show Legend" button at the bottom of the information panel in order to see the listing of symbology. Click that same button (which now says "Show Layers") to return to the listing of map layers.




The final buttons not found within the tabs and tools are **the "Save Project" and "Open Project" buttons** found just to the left of the "Getting Around" tab. You can save a file in the "geocortex silverlight project" format (.gvsp) in order to retain the following:

- your zoom level and location
- any objects you have drawn on the map (see below)
- any shapefiles or map services you have added to the map (see below)

The file is not saving a picture of the map, but rather information about where you were and what you had done to change the map from the original view. The file does save copies of any uploaded shapefiles within the .gvsp file.




In order to open your saved project at a later date (or for another person, to whom you have sent the .gvsp file to open it) you must open the Interactive Map Viewer and then

click on the "Open Project" button and navigate to where you saved the file. Double-clicking on the .gvsp file won't work, because your computer will not know what to do with it.

One other capacity not found within the tabs and tools is the **Search function.** The "Search For Map Features" box is found in the upper right corner of the screen, above the tool bar. In order to search for a location simply type in the address and hit enter. A search results table will appear at the bottom of the window, showing possible matches. Click on the one that looks like the best match and the map will zoom to that location and pop up a map tip for that feature.

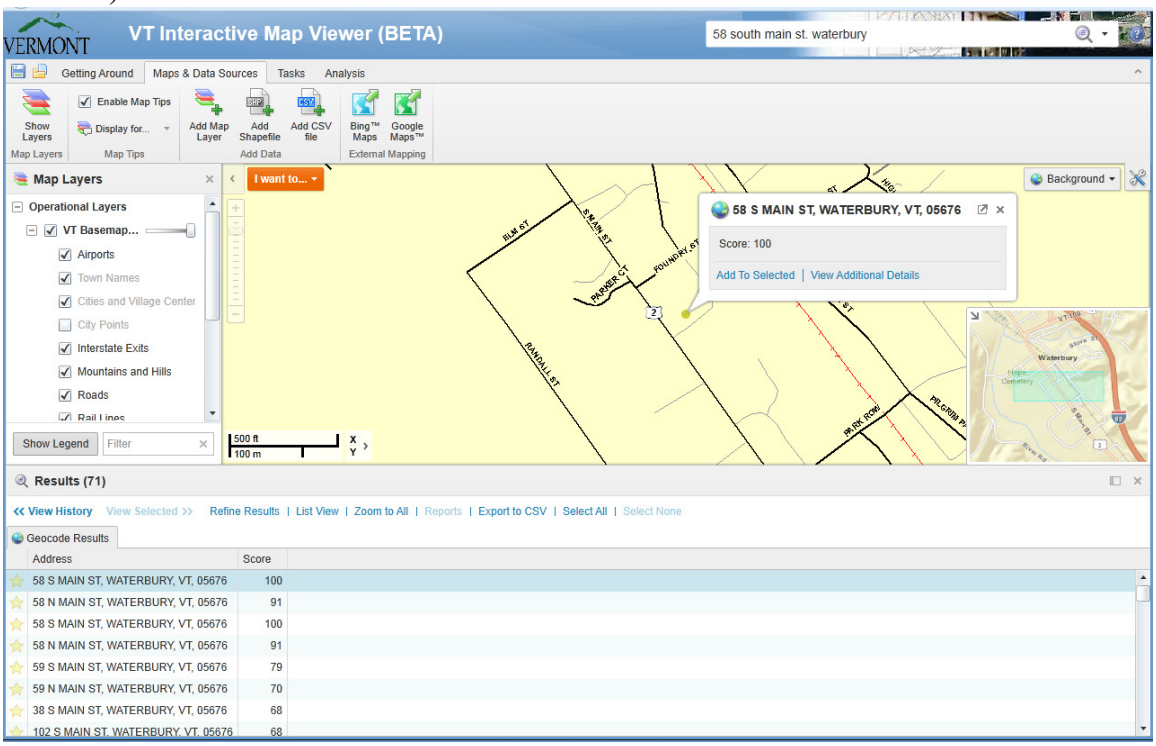
## Mapping Exercise: Locate VCGI Using the IMV

### 1. Locate VCGI

a) Open the **The Vermont Interactive Map Viewer** in a web browser making sure the browser is large enough to see all interface features.

b) Type VCGI's address in the "search for map features" box in the upper right corner of the page: **58 South Main St., Waterbury**

c)




d) Click on the feature listing that looks right in search results box at the bottom of the page. Your map will recenter and zoom in on that location.

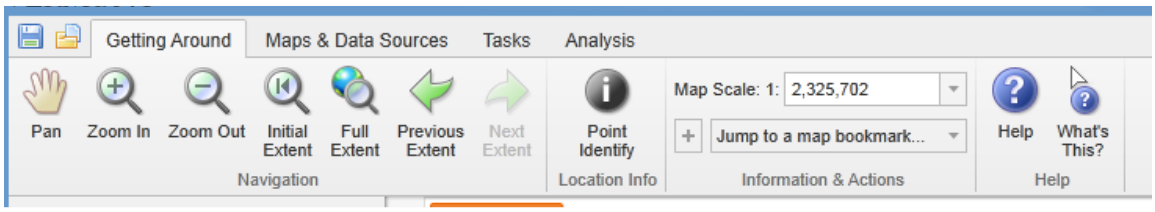
e) Change the background of the map by clicking on the small arrow to the right of the word "Background" in the upper right corner of the map image, then choose "VT BW Orthos" or " VT Color Imagery."

f) Find the map layers "BUILDINGS" and "Building Address Names" and click to place a check √ in the visibility box next to each layer name. 


g) The map will redraw showing building locations and their addresses in Waterbury.

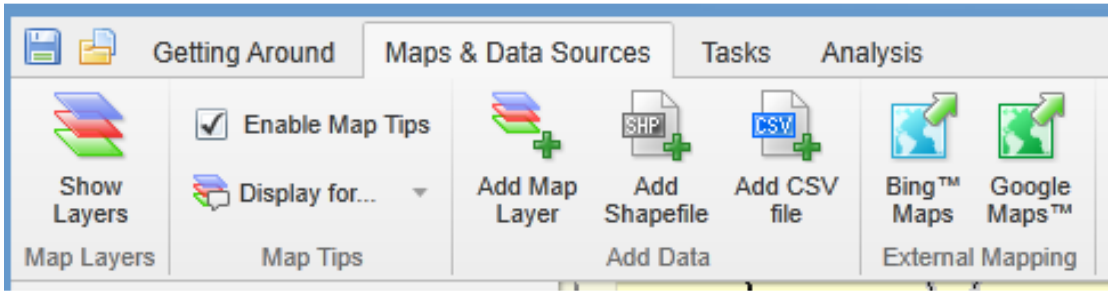
### Tools Within the Getting Around Tab

The tool buttons in the Getting Around tab allow you to (from left to right) **pan** (grab the map and drag it around), **zoom in** by dragging a box to indicate the area of interest (or clicking to zoom in a preset amount), **zoom out** a preset amount, **zoom to initial extent**, **zoom to full extent** (see the whole state), **zoom to the previous extent**, **identify** attributes of a feature, **jump to a map bookmark** (a location on the map), and **change the scale of the map**.




### Tools Within the Maps and Data Sources Tab

The tool buttons in the Maps and Data Sources tab allow you to (from left to right) **toggle back to the map layer list** (if currently showing legend), **enable map tips for certain layers** (allows user to click on feature and show some attribute information), **add a map layer** (which actually means add a map service via the internet), **add a shapefile** (a GIS data layer residing on a local computer or network drive), **add a CSV file** (comma-delimited file, essentially a spreadsheet containing x/y coordinates, saved as a comma-delimited text file), or **jump to the location in the map view in an outside map application** (Bing or Google Maps).



## Adding a Shapefile

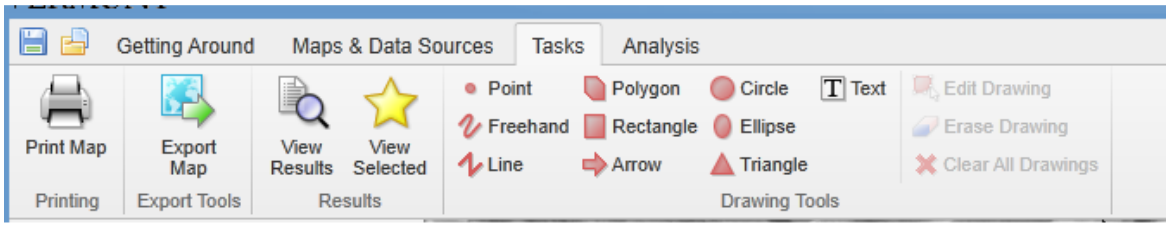
a) Click on the "add shapefile" tool - you will be asked for the location the shapefile on your computer or a drive to which you have access. PLEASE NOTE that you must indicate THREE files in this step. You must highlight the .shp, .dbf, and .prj files associated with the shapefile in order to add it to the project and have it show up in the correct geographic location!

b) Navigate to where the shapefile is located. Hold down your CTRL key as you click on the THREE files you must indicate. Then release the CTRL key and click "open."

c) It may take a few seconds, but the data should show up on the map, and the name of the map layer should show up in the information panel below the other map layers in a section called "Graphic Layers."

d) The data is temporarily uploaded to the IMV server at VCGI so that it can be viewed along with the rest of the basemap. There is a limit to the size of shapefile that can be uploaded: 10 MB.

## Exploring the TASKS Tab




## Drawing on the Map:

a. Clicking on the Tasks tab will reveal a large set of drawing tools. Each tool's functionality can be displayed by placing your cursor over it and waiting a moment for a descriptive label to appear. Common sense will guide your use of most of the tools, though you will find a few tips below.

b. Click on the "Add polygon to map" tool. Set the border, fill and thickness before you start to draw!

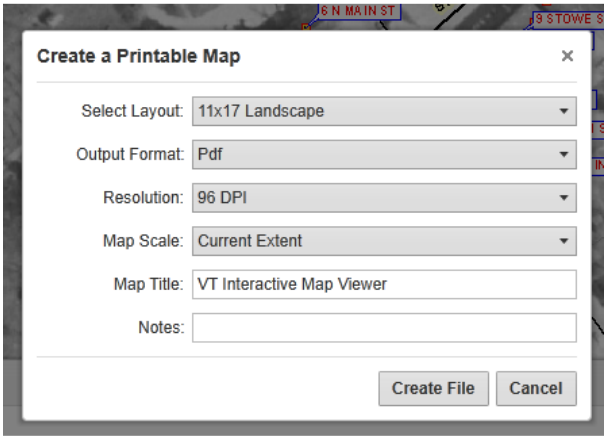
c. Create a polygon by clicking to set the locations of the vertices. Double click to indicate your polygon is done (and to stop adding vertices)

d. Click on the "Erase Drawing " tool and then click on your polygon to erase it, or click on "Clear All Drawings."

e. Edit the drawing to change its size.

**Printing/Exporting the Map:**

Click on the "Print Map" icon to create a printable map. You will choose a size and orientation, output format, resolution, scale, title, and notes (description). After you click "create file" the application will ask you to click one more time to open your map file, which you can then save, email, print, etc.

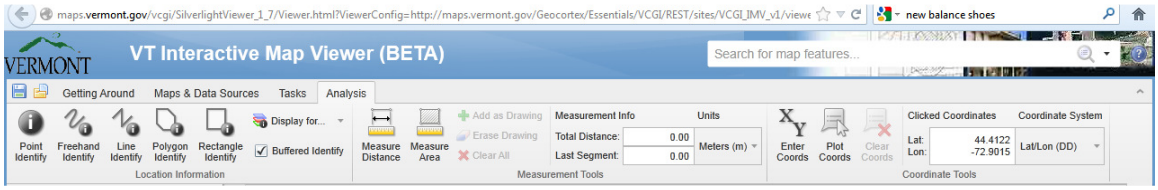



Clicking on "Export Map" will allow you to create an image of your map in the format of your choice: BMP, JPG, PNG, or TIF.

**View Results:**

This icon allows you to revisit searches you have done (like our search for VCGI's location). When you click on it, the search results window will reopen at the bottom of the page. Notice that you can click on "View History" in the search results window if you have done multiple search in this session and would like to pick one to revisit.

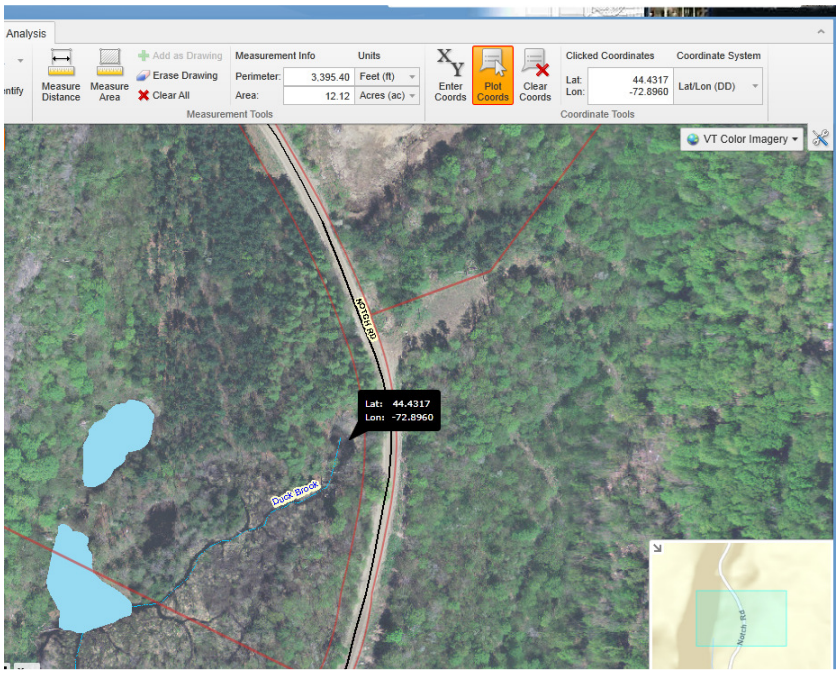
## Exploring the Analysis Tab




Location Information - Identify tools offer various ways to indicate features of interest and see the attribute information associated with those features. The options allow you to choose point to a particular feature, encompass an area, or create a buffer of a specific distance from a point, line, or shape. When drawing a polygon, you must double-click to let the application know when you are done.

Measurement Tools - You can measure distance or area, and you can set the units for those measurements (before you start measuring!). In order to "finish" measuring, you double-click on the map. At that time you can choose to add the graphic created during the measurement as a drawing. Otherwise it will disappear from the map as soon as you do anything on the map.

Coordinate Tools - If you know the coordinates of a location on the map and wish to change your extent to show that location (and create a marker on the map that shows it) you can choose "Enter Coordinates" and type in the coordinates. Notice that you have to choose what coordinate system you are referring to (lat/lon or other). If you wish to find out the coordinate of a location on the map, you can click on "Plot Coordinates." When you click on the map after choosing this option the map will show a callout with the coordinates for that location. Again, you should indicate the coordinate system you wish to use first.



## Additional Online Mapping Applications

The VCGI website includes links to a number of other interactive online mapping applications for Vermont and elsewhere.

The Agency of Natural Resources (ANR) Interactive Mapping Site includes a link to the Natural Resources Atlas. This application is very similar to the IMV but includes different data and more functionality.

Interactive maps can be found at http://www.vcgi.org/mapcenter/.